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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/702,184
Filing Date: November 05, 2003
Appellant(s): MINEI ET AL.

John C. Pokotylo
(Registration No. 36,242)
For Appellant

EXAMINER'S ANSWER

1. This is in response to the appeal brief filed on December 01, 2008 appealing from the Office Action (Final Rejection) mailed on May 29, 2008.

REAL PARTY IN INTEREST

2. The statement identifying the real party in interest is contained in the appeal brief, which is Juniper Networks, Inc.

RELATED APPEALS AND INTERFERENCES

3. The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF THE CLAIMS

4. The statement of the status of claims contained in the appeal brief is correct.

Claims 1-14, 16, 17, 19, and 24-48 are pending and involving in this appeal.

Claims 15, 18, and 20-23 have been canceled.

STATUS OF AMENDMENT

5. The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

SUMMARY OF CLAIMED SUBJECT MATTER

6. The summary of claimed subject matter contained in the appeal brief is correct.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

7. The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

CLAIMS APPENDIX

8. The copy of the appealed claims contained in the Appendix to the appeal brief is correct.

EVIDENCE (REFERENCES) RELIED UPON

9. List of evidence relied upon.

(a) US Patent No. 6,965,592, published on November 15, 2005, filed on January 24, 2001 by Tinsley et al.

(b) US Patent No. 7,151,775, published on December 19, 2006, filed on September 23, 1999 by Renwick et al.

GROUND OF REJECTION

10. Claims 14, 16, 17, 19, and 24 are rejected under 35 U.S.C. 101 because the claimed inventions of the claims 14, 16, 17, 19, and 24 are directed to non-statutory subject matter.

Claims 1-14, 16-17, 19, and 24-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tinsley et al (U.S. Patent No. 6,965,592) in view of Renwick et al (U.S. Patent No. 7,151,775).

CLAIM REJECTIONS - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 14, 16-17, 19, and 24 are rejected under 35 U.S.C. 101 because the claimed inventions of the claims 14, 16-17, 19, and 24 are directed to non-statutory subject matter.

Claim 14 recited "A machine-readable storage device storing…: a first field…, a second field…, and a third field…" which is directed to non-statutory subject matter for at least the reason that the plurality o fields are not in manner so as to be executable in/by a computer/processor. Further, a collection of fields (data structure), per se, is not an actual program product or an executable instructions/codes, instead being non-functional descriptive material. Thus the rejection under 101 as being an abstract idea, not being tangibly embodied, and not being in a manner so as to be executable in or by a computer or processor.

Other dependent claims, which are not specifically cited above are also rejected because of the deficiencies of their respective parent claims.

CLAIM REJECTIONS - 35 USC § 103(a)

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-14, 16-17, 19, and 24-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tinsley et al (U.S. Patent No. 6,965,592) in view of Renwick et al (U.S. Patent No. 7,151,775).

15. As to claim 1, Tinsley et al teach a method comprising: receiving a message for establishing a label-switched path (figures 8-9; and column 10 lines 20-24); determining whether or not the message includes extended information (reference teach that check the message has extension header) (figures 4s; and column 5 line 57 to column 6 line 28); if the message does not include extended information (MPLS header), determining, using a first part of the message (IP header) and routing information (reference teach that using IP header for routing); and if the message does include extended information (MPLS header), determining, using a second part of the message (MPLS header) and routing information (reference teach that using MPLS header for routing) (figures 6A-6B and 8-9; column 6 line 56 to column 7 line 57; and column 10 line 16 to column 11 line 29).

However, Tinsley et al do not explicitly teach that whether or nor to generate a further message to signal the label-switched path.

Renwick et al teach a method (see abstract; and column 1 lines 27-35), comprising: whether or nor to generate a further message to signal the label-switched path based on determining whether or not the message includes extended information/MPLS header (reference teach that sending a path setup signal based on the MPLS header) (see abstract; column 1 lines 50-62; column 2 lines 5-26 and 41-65; column 3 lines 34-50; column 5 lines 6-27; and column 6 line 65 to column 7 line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for generating a further message to signal the label-switched path based on determining whether or not the message includes extended information because it would have provided much faster and more efficient than IP forwarding, used efficiently in an environment with multiple parallel links, and saved considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

16. As to claims 2-5, Tinsley et al do not explicitly teach that the message is a label-mapping message, the message includes a FEC-label association and a label distribution protocol label-mapping, and the routing information was determined using an interior gateway protocol.

Renwick et al teach that the message is a label-mapping message, the message includes a FEC-label association and a label distribution protocol label-mapping, and the routing information was determined using an interior gateway protocol (Forward data packet using label switching, column 2 lines 5-65; column 5 lines 6-27; and column 6 lines 16-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for using a label-mapping message and an interior gateway protocol for routing information because it would have provided much faster and more efficient forwarding scheme than IP forwarding and saves considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

17. As to claims 6-7, Tinsley et al teach that the extended information includes resolution next hop information and the resolution next hop information includes a host address or prefix (Hope limit and addresses, figures 4-6; and column 5 line 57 to column 7 line 57).

18. As to claims 8-10, Tinsley et al do not explicitly teach that the method is performed by a first node in a network domain, and the host address or prefix is of a second node in the network domain; and the second node is an autonomous system border router, the first node runs an interior gateway protocol for generating routing

information in the first node, and the routing information includes an entry for the second node.

Renwick et al teach that the method is performed by a first node in a network domain, and the host address or prefix is of a second node in the network domain; and the second node is an autonomous system border router, the first node runs an interior gateway protocol for generating routing information in the first node, and the routing information includes an entry for the second node (working independently as a router, figures 1-2; column 2 lines 5-65; and column 4 line 59 to column 6 line 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for using the first node in a network domain and the second node as an autonomous system border router because it would have provided much faster and more efficient than IP forwarding and saved considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

19. As to claims 11-13, Tinsley et al do not explicitly teach that the node is an ingress node of the label-switched path; and the method is performed by a second node in a first network domain, wherein the ingress node is in a second network domain.

Renwick et al teach that the first part of the message includes an address or prefix of a node, the node is an ingress node of the label-switched path; and the method is performed by a second node in a first network domain, and the ingress node is in a

second network domain (figures 1-2; column 1 lines 50-62; column 2 lines 5-40; column 3 lines 9-50; and column 4 line 59 to column 6 line 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for using the node is an ingress node of the label-switched path, wherein the ingress node is in a second network domain because it would have provided much faster and more efficient than IP forwarding and saved considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

20. As to claim 14, Tinsley et al disclose that a message comprising: a) a first field including a label; b) a second field including forwarding equivalency class information; and c) a third field including label-switched path signaling resolution information, stored all fields in association with the label-switched path (figures 4-6; and column 5 line 57 to column 7 line 57), the label-switched path signaling resolution information including one of a host address and host prefix (Different addresses and headers, figures 4-6; and column 5 line 57 to column 7 line 57).

However, Tinsley et al do not explicitly teach a forwarding device, receiving the message, processes the message to (1) determine whether or not the forwarding device has a routing table entry that matches at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field, and (2) use the label included in the first field for

forwarding data only if the forwarding device determined that the forwarding device has a routing table entry that matches at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field.

Renwick et al disclose a forwarding device, receiving the message, processes the message to determine whether or not the forwarding device has a routing table entry and use the label included in the first field for forwarding data only if the forwarding device determined that the forwarding device has a routing table entry those match at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field (figures 1-2; column 2 lines 5-40; and column 4 line 59 to column 6 line 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for forwarding equivalency class information because it would have provided much faster and more efficient than IP forwarding, used efficiently in an environment with multiple parallel links, and saved considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

21. Claims 16-17, 19, and 24 do not teach or define any new or additional limitations above claims 2-5 and 8-13 and are rejected for the same reasons set forth.

22. Claims 25-37 do not teach or define any new or additional limitations above claims 1-13 and are rejected for the same reasons set forth.

23. As to claim 38, Tinsley et al teach that the second part of the message includes at least one of a host address and/or prefix corresponding to a node within a local network domain (figures 4-6; and column 5 line 57 to column 7 line 57).

24. Claim 39 does not teach or define any new or additional limitations above claim 38 and is rejected for the same reasons set forth.

25. As to claims 40-41, Tinsley et al do not explicitly teach generating, if it is determined to generate a further message to signal the label-switched path, a label mapping message; generating, if it is determined to generate a further message to signal the label-switched path, a label mapping message including an outgoing label; and creating a forwarding state binding between the outgoing label and a label in the message.

Renwick et al teach that generating, if it is determined to generate a further message to signal the label-switched path, a label mapping message; generating, if it is determined to generate a further message to signal the label-switched path, a label mapping message including an outgoing label; and creating a forwarding state binding between the outgoing label and a label in the message (reference teach that sending a path setup signal based on the MPLS header, see abstract; column 1 lines 50-62;

column 2 lines 5-26 and 41-65; column 3 lines 34-50; column 5 lines 6-27; and column 6 line 65 to column 7 line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for generating a further message to signal the label-switched path based on determining whether or not the message includes extended information because it would have provided much faster and more efficient than IP forwarding, used efficiently in an environment with multiple parallel links, and saves considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

26. Claims 42-43 do not teach or define any new or additional limitations above claims 40-41 and are rejected for the same reasons set forth.

27. As to claim 44, Tinsley et al teach a method for use by a data forwarding device comprising: receiving a first/second messages for establishing a label-switched path (figures 8-9; and column 10 lines 20-24); determining whether or not the messages includes extended information (reference teach that check the message has extension header) (figures 4s; and column 5 line 57 to column 6 line 28); finding a first label-switched route matching a first part of a first message; if the first message does not include extended information (MPLS header), determining, using a first part of the message (IP header) and routing information (reference teach that using IP header for

routing); determining that an interface of the first matching label-switched route found matches an interface on which the first message was received (figure 7; column 8 lines 10-33; and column 12 line 43 to column 13 line 5); finding a second label-switched route using a second part of the second message; if the message does include extended information (MPLS header), determining, using a second part of the message (MPLS header) and routing information (reference teach that using MPLS header for routing); and determining that an interface of the second matching label-switched route found matches an interface on which the second message was received (figure 7; column 8 lines 10-33; and column 12 line 43 to column 13 line 5) (figures 6A-6B and 8-9; column 6 line 56 to column 7 line 57; and column 10 line 16 to column 11 line 29).

However, Tinsley et al do not explicitly teach that whether or nor to generate a further messages to signal the label-switched paths.

Renwick et al teach a method (see abstract; and column 1 lines 27-35), comprising: whether or nor to generate a further messages to signal the label-switched paths based on determining whether or not the message includes extended information/MPLS header (reference teach that sending a path setup signal based on the MPLS header) (see abstract; column 1 lines 50-62; column 2 lines 5-26 and 41-65; column 3 lines 34-50; column 5 lines 6-27; and column 6 line 65 to column 7 line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for generating a further message to signal the label-switched path based on determining whether or not the message includes extended information

because it would have provided much faster and more efficient than IP forwarding, used efficiently in an environment with multiple parallel links, and saved considerable processing time, which leads to improved network operation (see Renwick et al column 4 lines 24-35).

28. Claims 45-48 do not teach or define any new or additional limitations above claims 2-4 and 6 and are rejected for the same reasons set forth.

RESPONSE TO ARGUMENTS

29. The examiner summarizes the various points raised by the appellant and addresses them individually.

30. As per appellants' arguments filed on December 01, 2008, appellants argued in substance that:

(A) Argument: Appellant's arguments (Brief Page 12, respect to claims 45-48) with respect to objections of the claims 45-48 have been fully considered and found persuasive; therefore, the objections to claims 45-48 have been withdrawn.

(B) Argument: Appellant argues (Brief Page 13, respect to claim 14) that the data structure need not be program instructions executable by a computer or a processor, and (Brief Page 14) claim 14 recites a physical or logical relationship among data

elements, designed to support specific data manipulation functions stored on a machine-readable storage device; therefore, the claims 14, 16, 17, 19, and 24 recites statutory subject matter in view of the foregoing.

Response: Claim 14 is rejected under 35 U.S.C. 101 because the claimed invention of the claim 14 is directed to non-statutory subject matter. Claim 14 recited "A machine-readable storage device storing…: a first field…, a second field…, and a third field…" stored information associated with a label switch path, which is not an actual program product and "a forwarding device" does not execute these fields to perform the process/method, which is non-functional descriptive material. Thus the rejection under 101 as being an abstract idea, not being tangibly embodied, and not being in a manner so as to be executable in or by a computer or processor.

(C) Argument: Appellant argues (Brief Pages 15 and 21-24), that claims 1, 25, and 44 are not rendered obvious by the Tinsley and Renwick patents, and (Brief Pages 16 and 22) the combination of the Tinsley and Renwick do not concern receiving a message for establishing a label-switched path as recited in the claims 1, 25, and 44.

Response: Tinsley et al teaches *receiving a message for establishing a label-switched path (figures 8-9; and column 10 lines 20-24).*

Renwick et al teaches *sending a path setup signal based on the MPLS header (see abstract; column 1 lines 50-62; column 2 lines 5-26 and 41-65; column 3 lines 34-50; column 5 lines 6-27; and column 6 line 65 to column 7 line 20).*

(D) Argument: Appellant disagrees (Brief Page 16, respect to claim 1) with the characterizations that the MPLS header of the Tinsley patent as both the claimed "second part of a message" and the claimed "extended information".

Response: Specifically, Tinsley patent discloses that check the message including MPLS header, which is "second part of a message" (see figure 6A and column 7 lines 22-39), and check the MPLS header including extended fields, which is "extended information" (see figure 6B and column 7 lines 40-52), which reads on the claimed limitations.

(E) Argument: Appellant argues (Brief Pages 17 and 23, respect to claim 1) that the combination of the Tinsley and Renwick do not determine whether to use a first part or a second part of a message to generate a further message for signaling the label-switched path depending on whether the message includes extended information.

Response: Specifically, Tinsley patent discloses that message has only IPv6 header and extension headers are optional, and routing the packet based on its IP header information (column 5 lines 57-66 and column 6 lines 56-65), which inherently implies not to generate a further message to signal the label-switched path. Also Tinsley patent discloses that the message has MPLS header, and routing the packet based on its MPLS header information (column 6 line 56 to column 7 line 5); and Renwick patent teaches sending a path setup signal based on the MPLS header (column 2 lines 5-26 and 41-65), which reads on the claimed limitation of generate a further message to signal the label-switched path.

(F) Argument: Appellant argues (Brief Page 18, respect to claim 1) that the Examiner has failed to establish a prima facie case of obviousness and not shown that there is some suggestion or motivation to combine the Tinsley and Renwick Patents.

Response: Examiner establishes a prima facie case of obviousness (see rejection of claim 1) and shows that there is some suggestion or motivation to combine the Tinsley and Renwick because Tinsley teaches that determining weather or not the message includes extended information and using specific routing information based on the determining step (figures 4s, 6s, and 8-9; and column 6 line 56 to column 7 line 20); and Renwick teach that sending a path setup signal based on the MPLS header (see abstract; and column 2 lines 5-26 and 41-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al in the method of Tinsley et al for generating a further message to signal the label-switched path based on determining whether or not the message includes extended information because it would have provided much faster and more efficient than IP forwarding, used efficiently in an environment with multiple parallel links, and saved considerable processing time, which leads to improved network operation(see Renwick et al column 4 lines 24-35).

(G) Argument: Appellant argues (Brief Pages 19-20, regarding claim 14) that the claim 14 is not rendered obvious by the Tinsley and Renwick patents.

Response: Tinsley et al disclose that a message comprising: a) a first field including a label; b) a second field including forwarding equivalency class information;

and c) a third field including label-switched path signaling resolution information, stored all fields in association with the label-switched path (figures 4-6; and column 5 line 57 to column 7 line 57), the label-switched path signaling resolution information including one of a host address and host prefix (Different addresses and headers, figures 4-6; and column 5 line 57 to column 7 line 57). However, Tinsley et al do not explicitly teach the function of a forwarding device.

Renwick et al disclose a forwarding device, receiving the message, processes the message to determine whether or not the forwarding device has a routing table entry and use the label included in the first field for forwarding data only if the forwarding device determined that the forwarding device has a routing table entry those match at least one of (A) the forwarding equivalency class information included in the second field, and (B) the host address or the host prefix included in the third field (figures 1-2; column 2 lines 5-40; and column 4 line 59 to column 6 line 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for forwarding equivalency class information because it would have provided much faster and more efficient than IP forwarding, used efficiently in an environment with multiple parallel links, and saved considerable processing time, which leads to improved network operation. Accordingly, appellant's arguments that the claim 14 is not rendered obvious by the Tinsley and Renwick patents are moot.

(H) Argument: Appellant argues (Brief Pages 25-26, respect to claims 6-8, 10, 30-32, 34, and 47) that the Tinsley does not teach that the extended information or the second part of the message includes resolution next hop information.

Response: Tinsley explicitly teaches that the extended information or the second part of the message includes resolution next hop information (see figures 4A-4B and column 5 line 57 to column 6 line 28).

(I) Argument: Appellant argues (Brief Pages 27-28, respect to claims 9 and 33) that the Renwick does not teach that the second node is an autonomous system border router.

Response: Renwick explicitly teaches that the second node is an autonomous system border router (figures 1-2; column 2 lines 5-65; and column 4 line 59 to column 6 line 32). Also Renwick teaches that the egress node sends its allocated label back to the next preceding node, which stores the label and generates its own label for the traffic and transmits that label back to its next preceding node, which implies that the second node is an autonomous system border router (working independently as a router) (see figures 1-2 and column 2 lines 5-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for using the first node in a network domain and the second node as an autonomous system border router because it would have provided much

faster and more efficient than IP forwarding and saved considerable processing time, which leads to improved network operation.

(J) Argument: Appellant argues (Brief Page 29, respect to claims 13 and 37) that the Renwick does not teach that the method is performed by a second node in a first network domain, and the ingress node is in a second network domain

Response: Renwick explicitly teaches that the method is performed by a second node in a first network domain, and the ingress node is in a second network domain (figures 1-2; column 1 lines 50-62; column 2 lines 5-65; column 3 lines 34-50; and column 4 line 59 to column 6 line 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Renwick et al stated above in the method of Tinsley et al for using the node is an ingress node of the label-switched path, wherein the ingress node is in a second network domain because it would have provided much faster and more efficient than IP forwarding and saved considerable processing time, which leads to improved network operation.

EVIDENCE AND RELATED PROCEEDING(S) APENDIX

31. No evidence is relied upon by the examiner in the rejection of the claims under appeal.

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

32. For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Bharat N Barot/

Primary Examiner, Art Unit 2455

February 26, 2009

Conferees:

/saleh najjar/

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